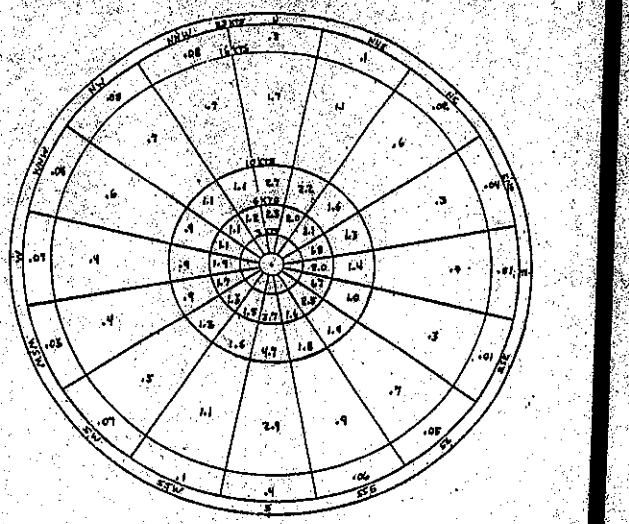
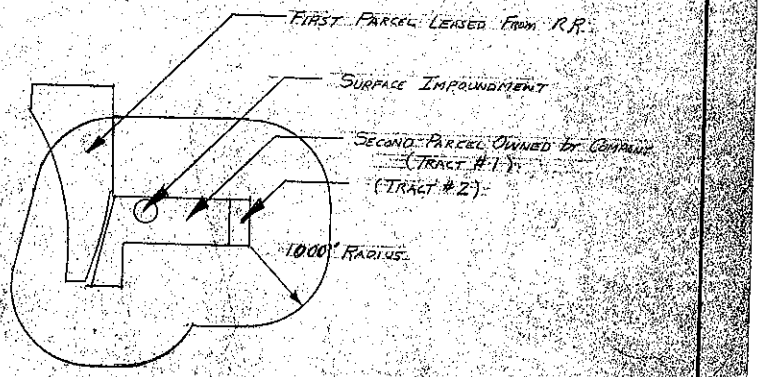
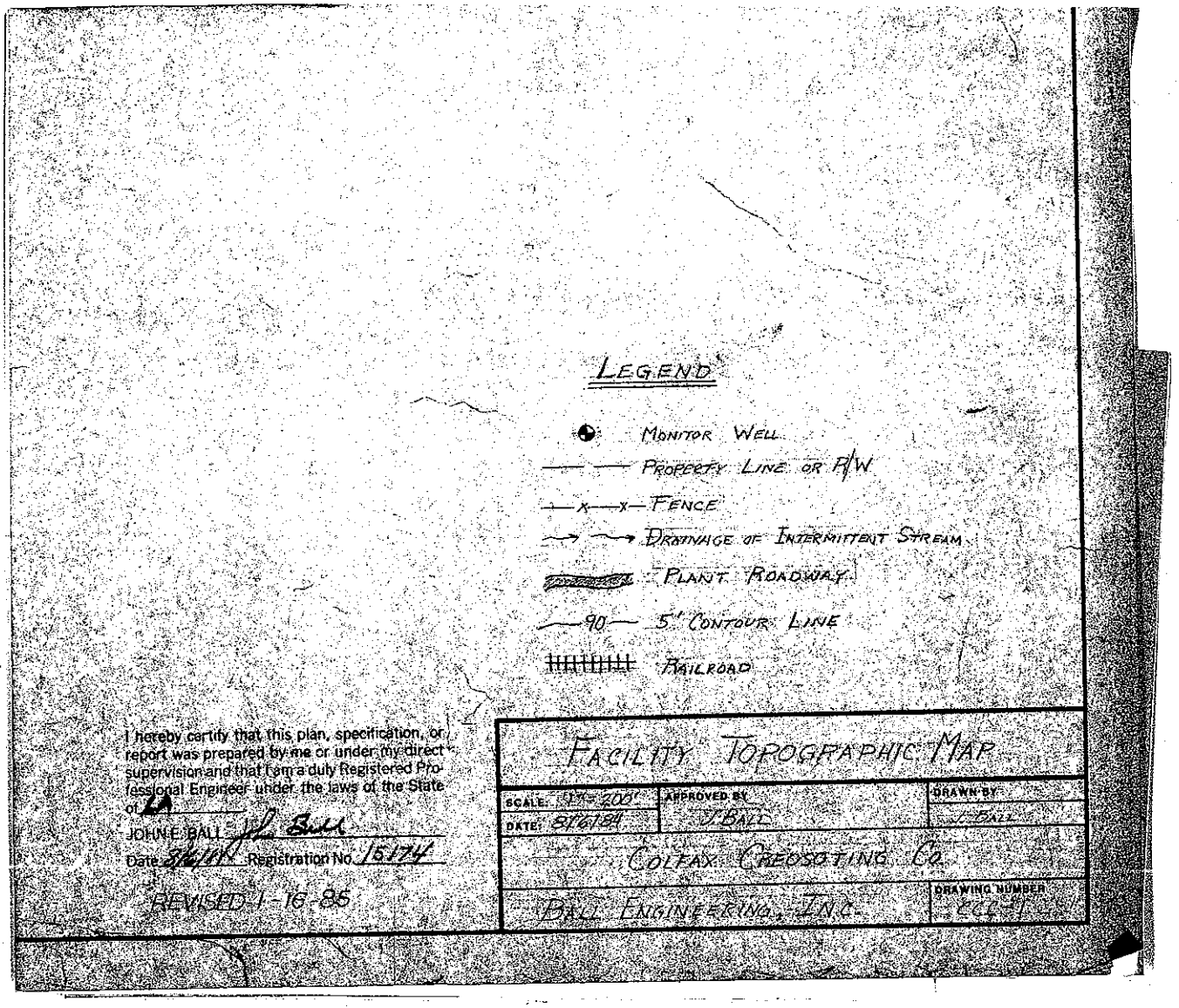


ANNUAL WIND ROSE FOR ALEXANDRIA, LA



LAND PARCEL LOCATOR



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of LA

JOHN E. BALL /s/ John E. Ball

Date 3/6/84 Registration No. 16174

REVISED 1-16-85

FACILITY TOPOGRAPHIC MAP

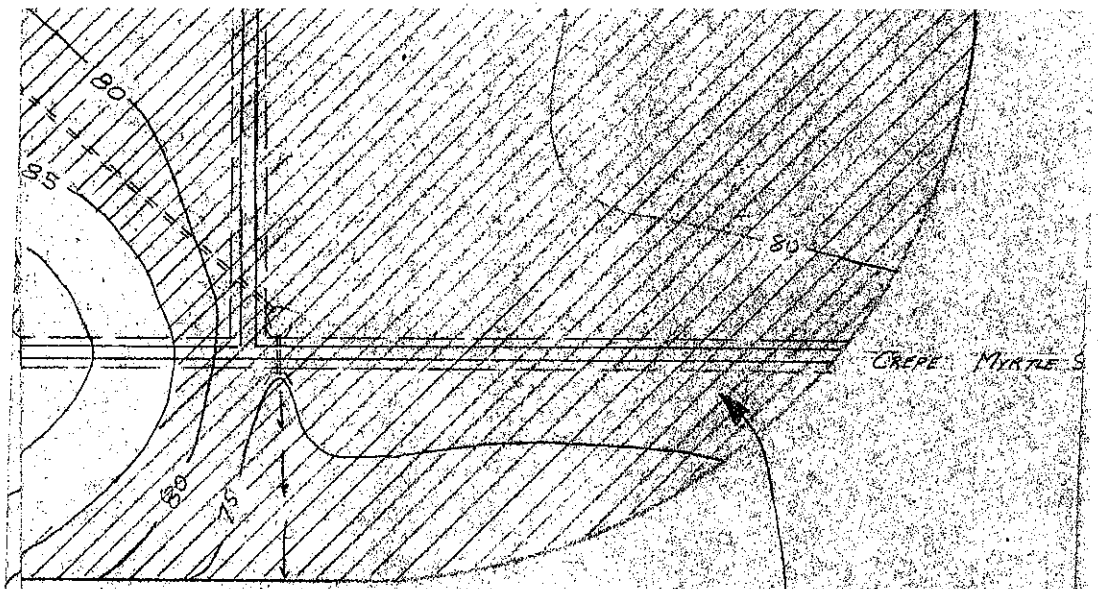
SCALE: 1"= 200'	APPROVED BY: /BALL	DRAWN BY: /BALL
DATE: 3/6/84		

COLFAX CREOSOTING CO.

BALL ENGINEERING, INC.

DRAWING NUMBER: CCC-1

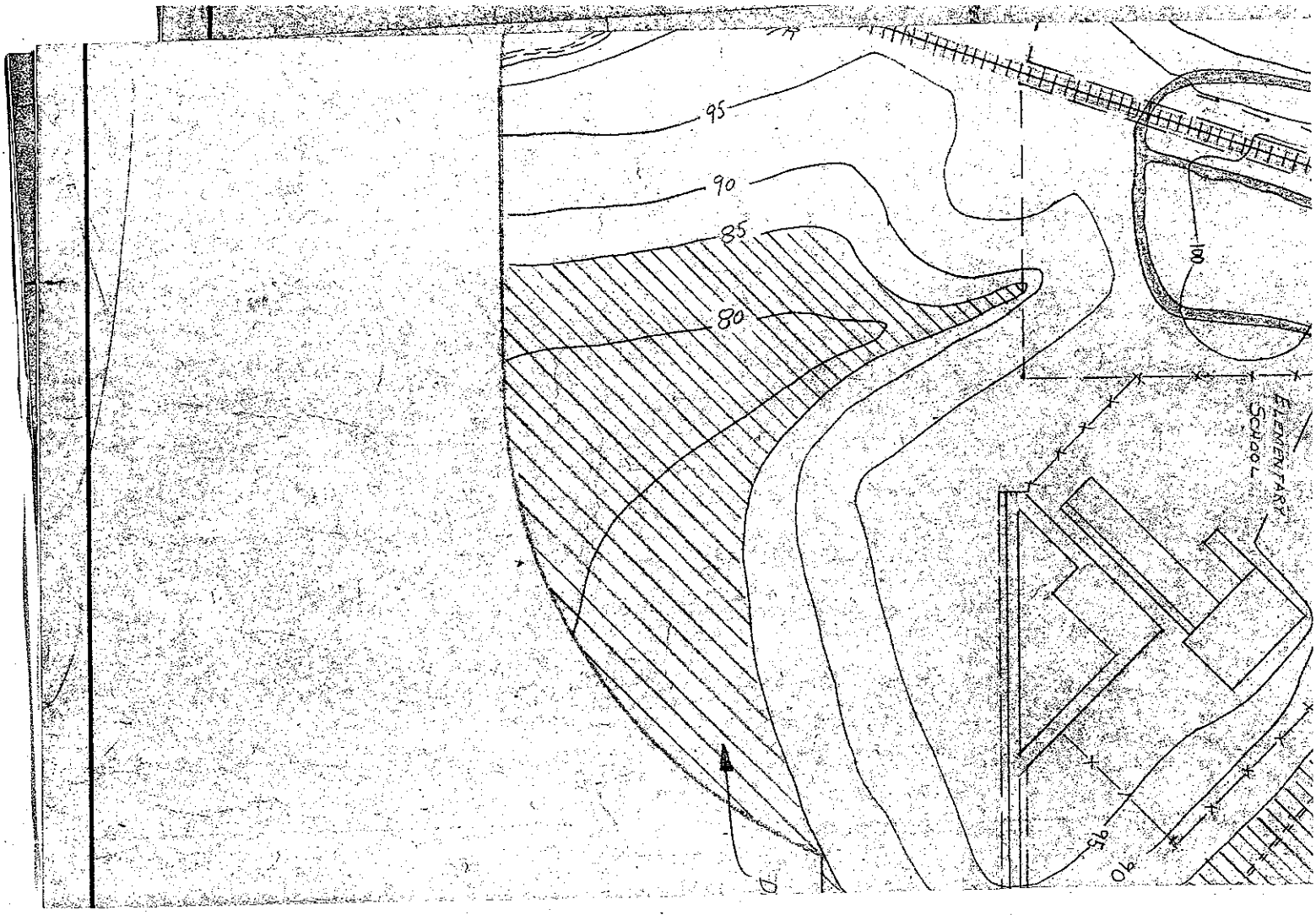
DOROTHY STREET
BARRON STREET
NATIE STREET
MW-5



IAGONAL LINED AREAS ARE WITHIN THE 100-YEAR FLOODPLAIN
(85.' CONTOUR)

REVISED 4-8-68

N
100
MW # 1
CITY SEWER
90
CLOSED
TURNAROUND
MILTON STREET
100
RUTH STREET
MW # 2
P2
P1
MW # 3
P3
MW # 4
P4
85
90
STEPHEN STREET
48" DIA. CONC. STORM DR.
85
REVISED 4-8-98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ELEMENTARY
SCHOOL
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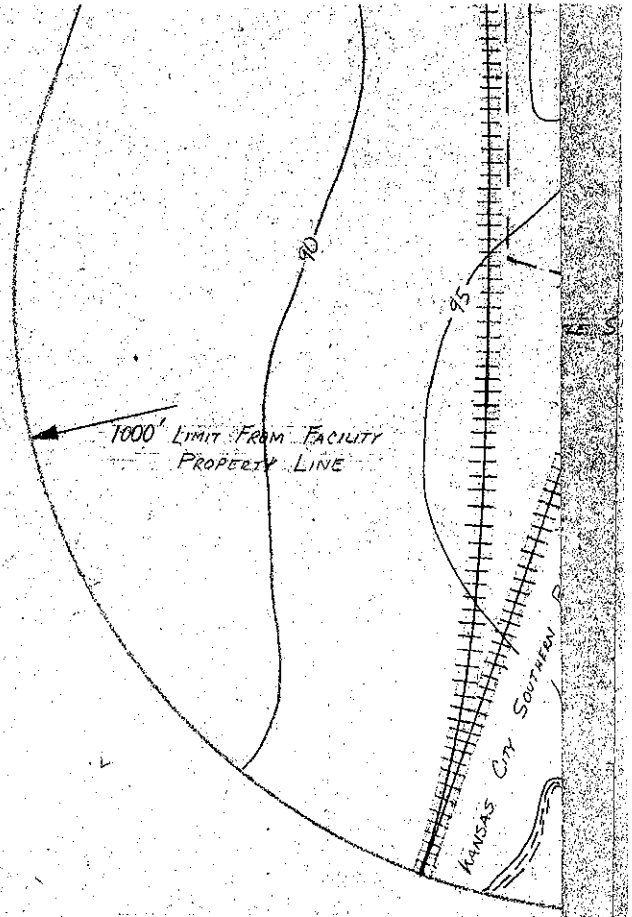
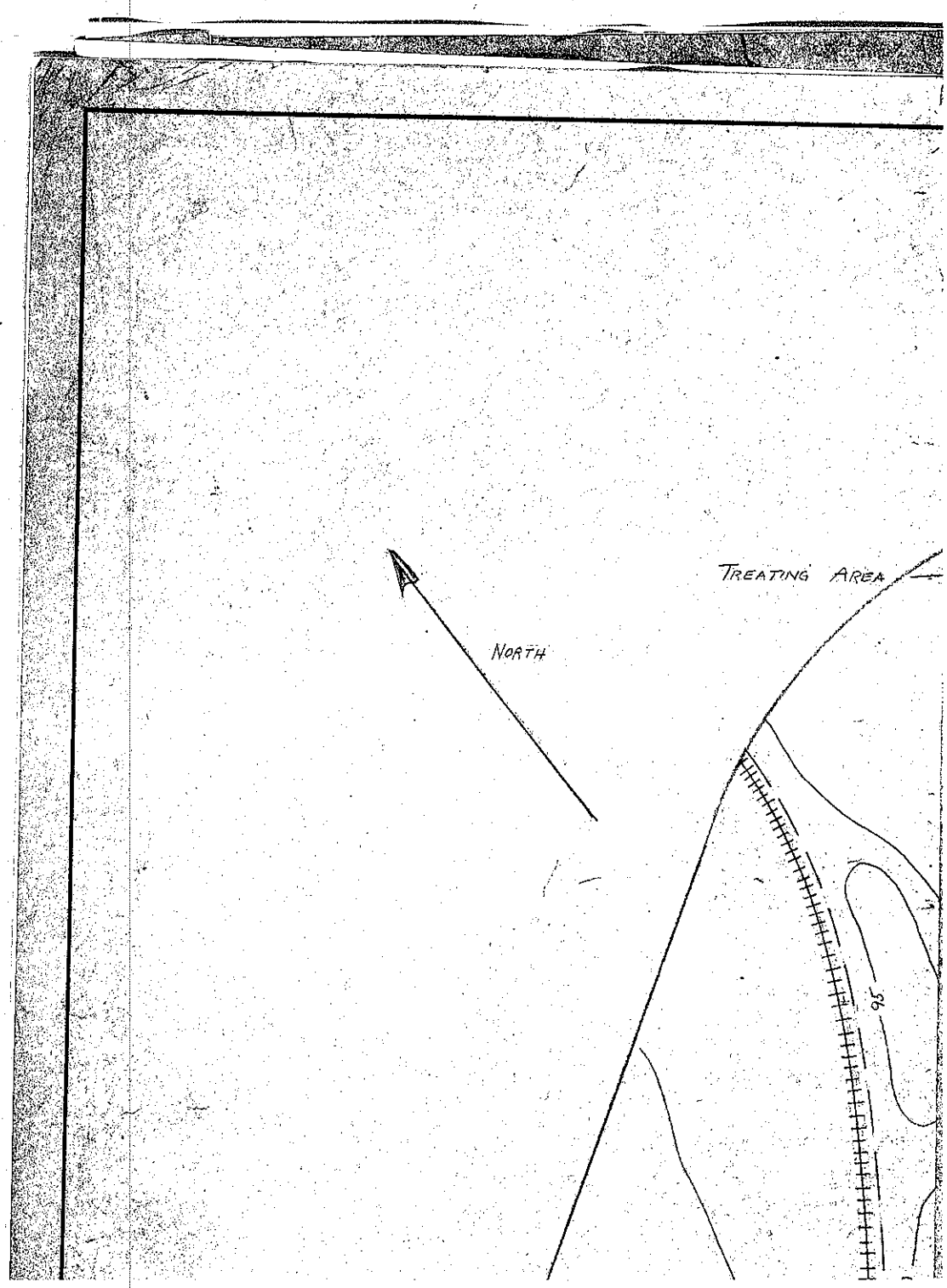
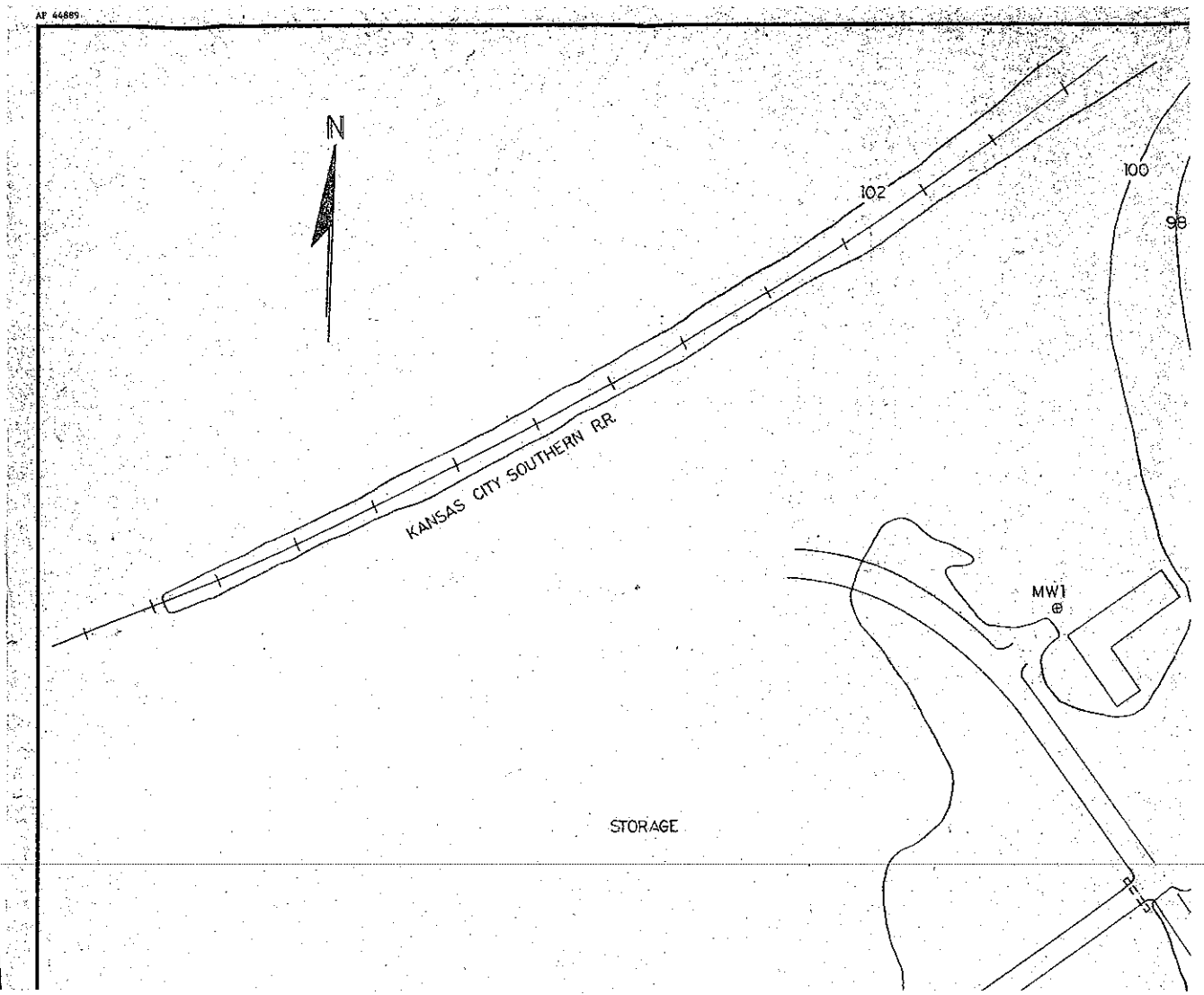
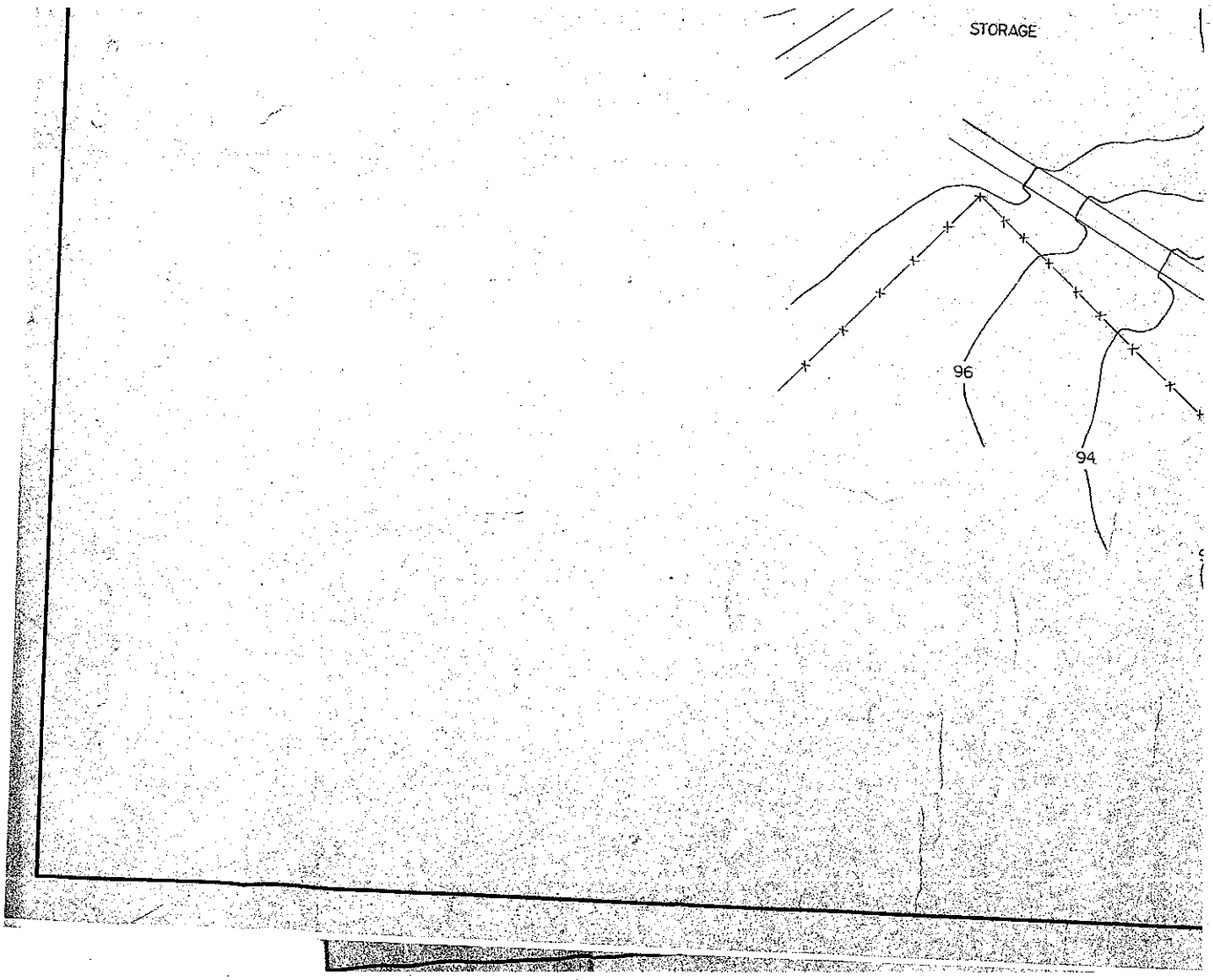


Ball Engineering, Inc.
BOX JB
UNIVERSITY, ALABAMA 35486


TREATING AREA
NORTH
96

AP 44889

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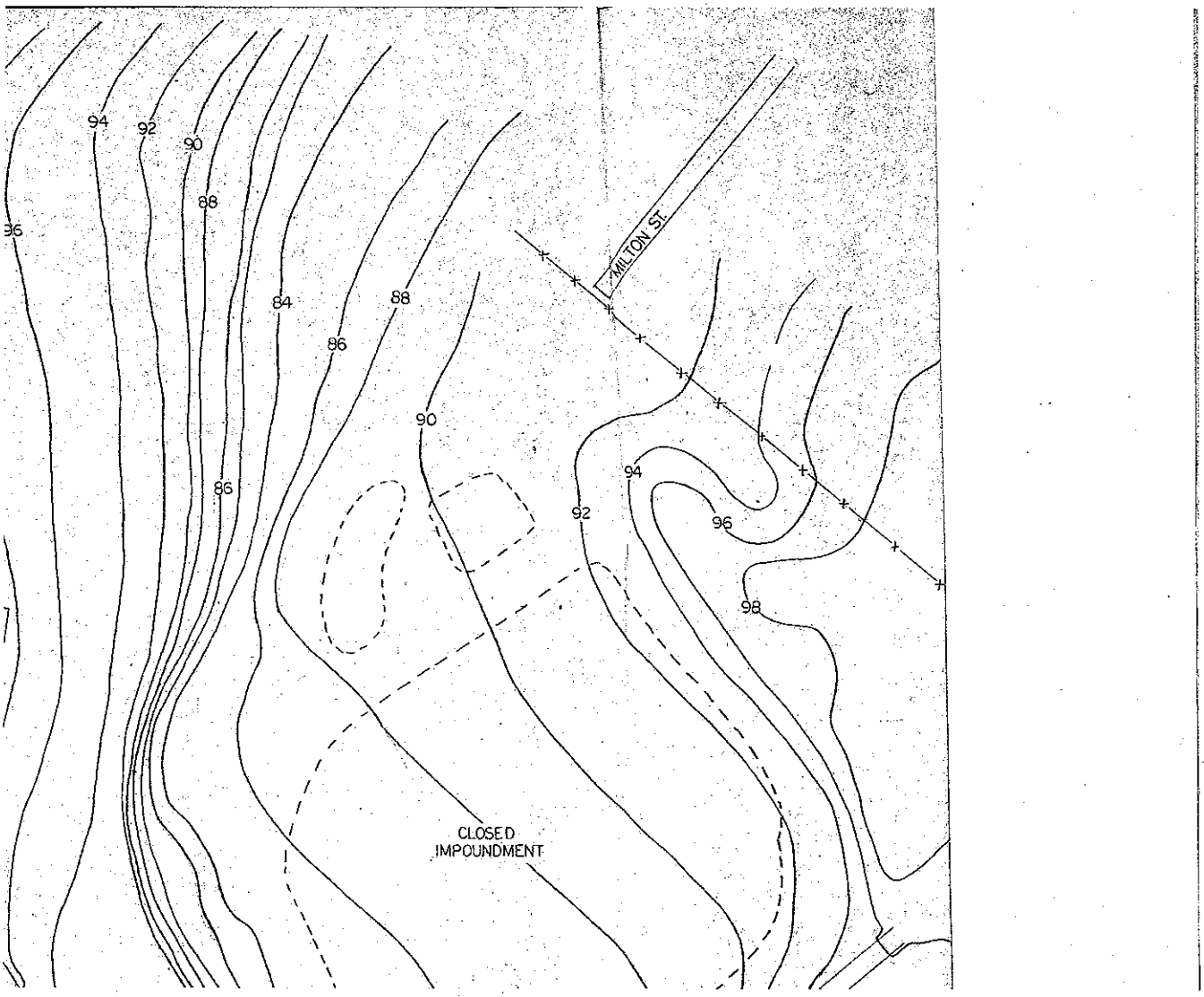
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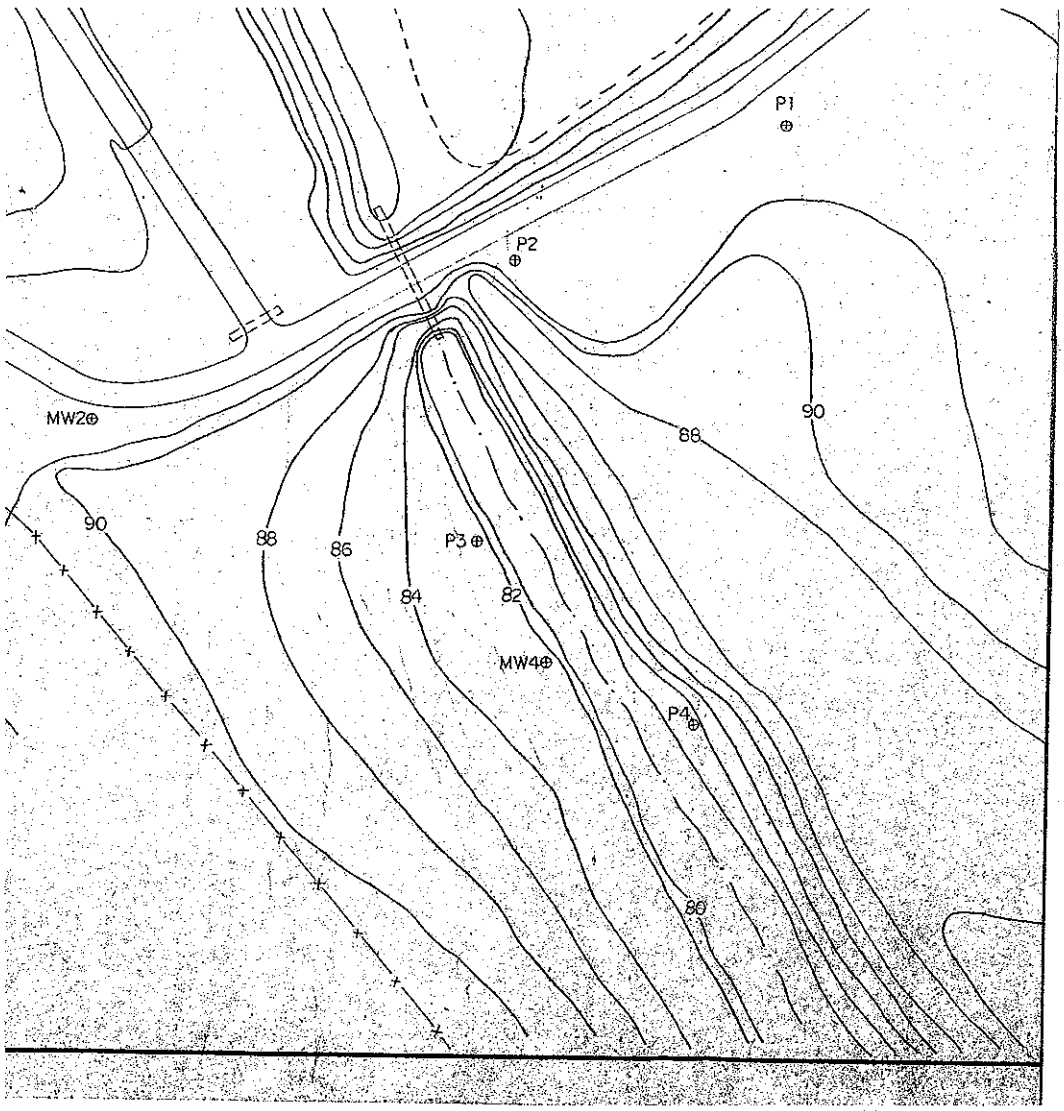
MILTON ST.
CLOSED
IMPOUNDMENT


P1
P2
MW2
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MW4
P4
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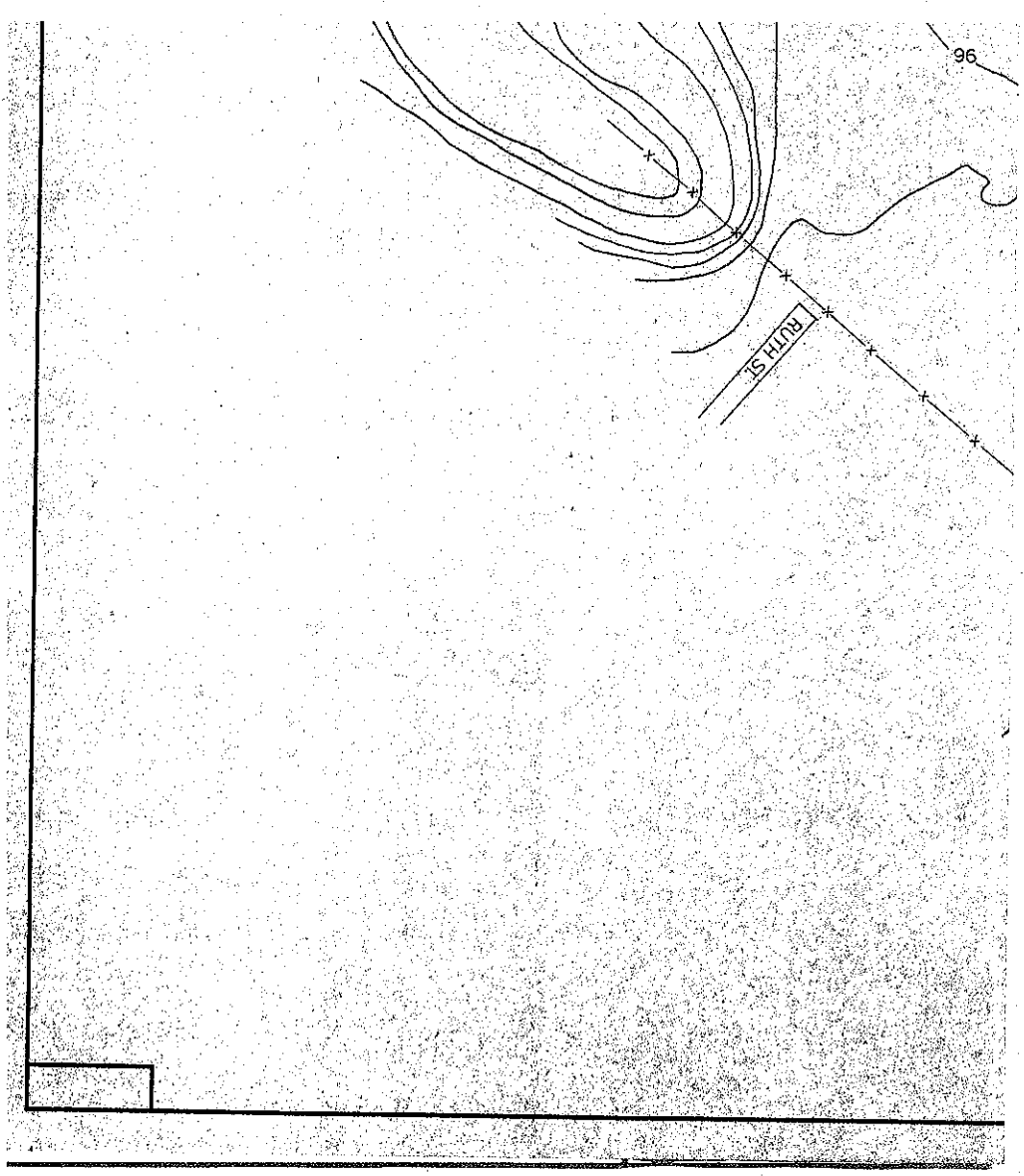
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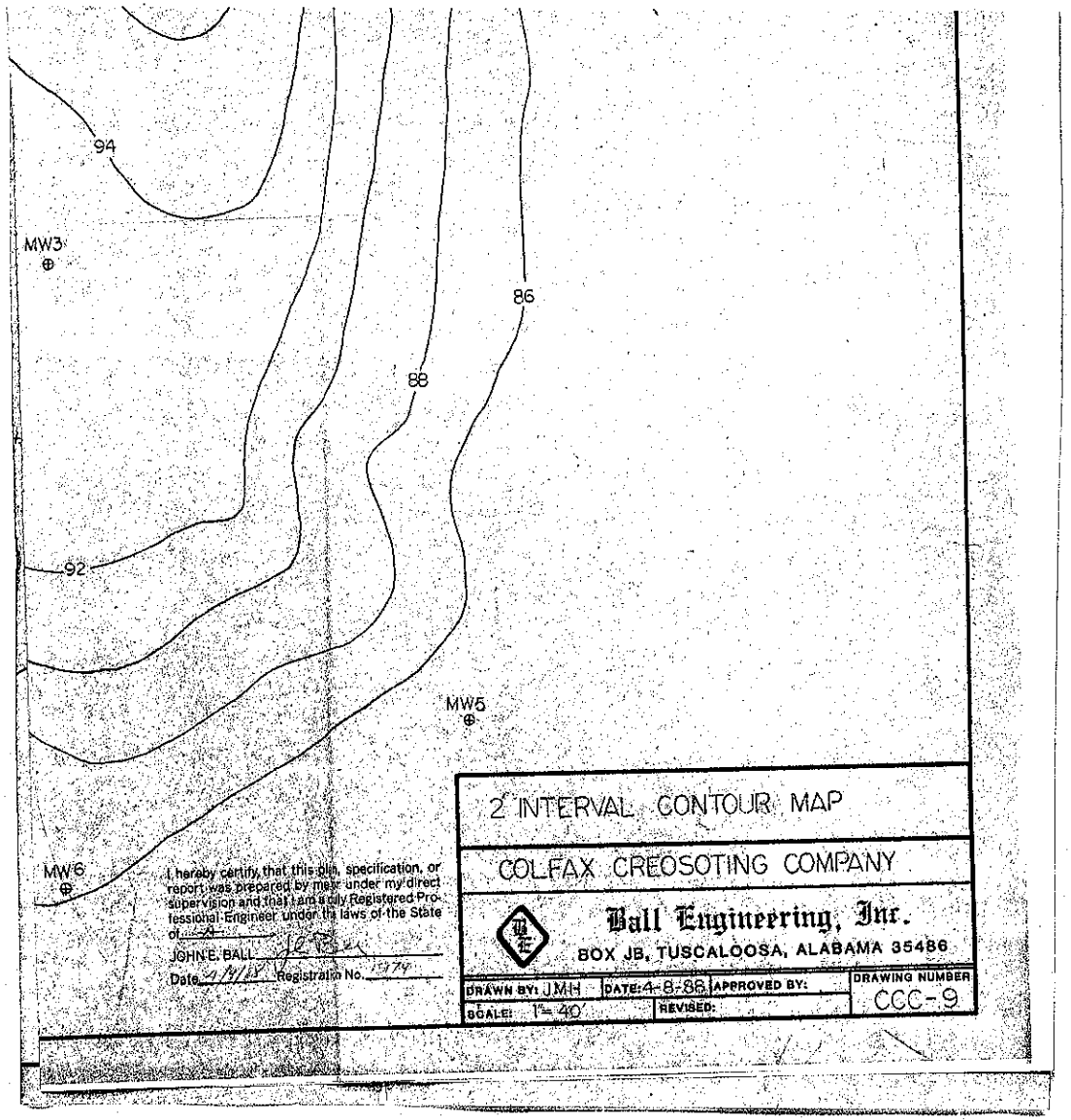
RUTH ST



2' INTERVAL CONTOUR MAP

COLFAX CREOSOTING COMPANY

Ball Engineering, Inc.

BOX JB, TUSCALOOSA, ALABAMA 35486

DRAWN BY: JMH	DATE: 4-8-86	APPROVED BY:	DRAWING NUMBER
SCALE: 1"= 40'	REVISED:		CCC-9

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Alabama

JOHN E. BALL

Date 4/9/86 Registration No. 11774

CHAPTER 18

GROUNDWATER PROTECTION

18.1 Applicability

18.1 a) Except as provided in §18.1b), the regulations in this Chapter apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments, waste piles, land treatment units, or landfills. The owner or operator must satisfy the requirements of this Chapter for all waste (or constituents thereof) contained in any such waste management unit at the facility that receives hazardous waste (hereinafter referred to as a "regulated unit"). Any waste or waste constituent migrating beyond the waste management area under §18.1b) is assumed to originate from the regulated unit unless the Administrative Authority finds that such waste or waste constituent originated from another source.

This facility stores hazardous waste in a surface impoundment and therefore will comply with chapter 18.

18.1 b) Except as provided in §§13.2g) and 16.2h), the owner or operator is subject to all groundwater monitoring regulations;

The company acknowledges this requirement and will comply.

18.1 c) The Administrative Authority may consider waiving or altering groundwater monitoring requirements as specified in §18.8; if geological and hydrological information establishes that subsurface migration of hazardous waste from the facility will not create a threat to human health or the environment for:

1) Waste piles pursuant to §13.1c), 13.1d), and 13.4;

This facility does not have a waste pile therefore this section is not applicable.

2) The treatment zone of land treatment unit -- This facility does not have land treatment and therefore this section is not applicable.

3) A regulated unit, provided the Administrative Authority finds, based on the facilities demonstrated that there is no potential for migration of any hazardous constitutents into the groundwater or surface water during the active life of the regulated unit or at any future time. The demonstration must be certified by an independent qualified geologist or geotechnical engineer. In order to provide an adequate margin of safety in the prediction of potential migration of any hazardous constitutent, the owner or operator must base any predictions made under this section on assumptions that maximize the rate of liquid migration.

The company does not wish to apply for a waiver.

18.1 d) The regulations under this Chapter apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in the subpart:

1) Do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure;

The company acknowledges this exception.

2) Apply during the post-closure care period under Chapter 19, Subchapter II if the owner or operator is conducting a detection monitoring program under §18.9;

The company acknowledges this requirement and will comply.

3) Apply during the compliance period under §18.7 if the owner or operator is conducting a compliance monitoring program under §18.10 or a corrective action program under §18.11.

The company acknowledges this requirement and will comply.

18.2 Required programs

18.2 a) Owners and operators subject to this Chapter must conduct a monitoring and response program as follows:

1) Whenever hazardous constituents under §18.4 from a regulated unit are detected at the compliance point under §18.6, the owner or operator must institute a compliance monitoring program under §18.10

The company acknowledges this requirement and will comply. Please see Attachment 16 for monitoring program.

2) Whenever the ground-water protection standard under §18.3 is exceeded, the owner or operator must institute a corrective action program under §18.11;

The company acknowledges this requirement and will comply. Please see Attachment 16 for an outline of a corrective action program.

3) Whenever hazardous constitutents under §18.4 from a regulated unit exceed concentration limits under §18.5 in groundwater between the compliance point under §18.6 and the down gradient facility property boundary, the owner or operator must institute a corrective action program under;

The company acknowledges this requirement and will comply.

4) In all other cases, the owner or operator must institute a detection monitoring program under §18.9.

The company acknowledges this requirement and will comply. Please see Attachment 16 for detection monitoring program. Please see Attachment 17 for monitor well results.

18.2 b) The Administrative Authority will specify in the facility permit the specific elements of the monitoring and response program. The Administrative Authority may include one or more of the programs identified in §18.2a) in the facility permit as may be necessary to protect human health and the environment. The Administrative Authority will specify the circumstances under which each of the programs will be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the Administrative Authority will consider the potential adverse effects on human health and the environment that might occur before final

administrative action on a permit modification application to incorporate such a program could be taken.

The company acknowledges this requirement and will comply.

18.3 Groundwater protection standard

18.3 a) The owner or operator must comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents (see §18.4) entering the groundwater from a regulated unit, do not exceed the concentration limits (see §18.5) in the uppermost aquifer underlying the waste management area beyond the point of compliance (see §18.6) during the compliance period (see §18.7). The Administrative Authority will establish this groundwater protection standard in the facility permit when hazardous constituents have entered the groundwater from a regulated unit.

The company acknowledges this requirement and will comply.

18.3 b) The groundwater monitoring system shall consist of necessary wells, at least one hydraulically upgradient, to monitor groundwater moving toward the facility, and all the necessary number of wells downgradient to monitor groundwater leaving the facility. The wells shall be located to intercept contamination at the earliest possible occurrence. Well locations and completion depths must be selected to assure that all probable contaminant flow-paths are monitored. The wells shall be cased, and the casings shall be adequately sealed so that contaminants cannot be introduced from the surface or from one aquifer to another within the well bore, and so that only one water bearing sand is sampled per well. The entire groundwater monitoring system must be approved by the Administrative Authority.

The company acknowledges this requirement and has complied. Please see Attachment 16.

18.3 c) The owner or operator of the facility shall develop and adhere to a groundwater sampling and analysis plan, and shall immediately advise the Department when significant changes in ground water quality are determined and verified.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.3 d) Leachate

1) The Leachate monitoring system shall contain a method and device to secure samples, and determine leakage at two locations in each unit where the system is required as follows:

At the low point inside the barrier (liner) encased in sand, or other porous material, ensuring that leachate from all contents will percolate to the low point. Provisions for pumping out all leachate which gathers inside this barrier shall be made;

At a low point under the barrier (liner) and encased in a porous layer over a dense underlayment, or natural soil, to verify the integrity of the liner.

The facility has no leachate monitoring system.

2) The system shall permit sampling from an accessible surface location.

The facility has no leachate monitoring system.

3) An equivalent system acceptable to the Administrative Authority may be installed in existing facilities.

18.3 e) Air -- Installed, or available portable air monitoring devices shall be located at all sites involving: incineration, landfill, or treatment facilities. An installed air monitoring system (triangular grid) with continuous recording shall be installed at all commercial sites.

This facility has no incineration, landfill or treatment operations. Therefore this section does not apply to this facility.

18.3 f) Sampling -- Samples shall be taken from all required monitoring systems before waste is introduced (for new sites) to provide adequate base-line data. Sampling shall be done quarterly, and complete records shall be maintained at the site for examination by the Administrative Authority.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.4 Hazardous constituents

18.4 a) The Administrative Authority will specify in the facility permit the hazardous constituents to which the groundwater protection standard of §18.3 applies. Hazardous constituents are constituents identified in Table 1 of Chapter 17 that have been detected in groundwater in the uppermost aquifer underlying a regulated unit, and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless the Administrative Authority has excluded them under §18.4b).

The company acknowledges this requirement and will comply.

18.4 b) The Administrative Authority upon sufficient demonstration by the permittee, may exclude any Table 1, Chapter 17 constituents from the list of hazardous constituents specified in the facility permit if he finds that these constituents are not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the Administrative Authority will consider the following:

1) Potential adverse effects on groundwater quality, considering:

The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

The hydrogeological characteristics of the facility and surrounding land;

The quantity of groundwater and the direction of groundwater flow;

The proximity and withdrawal rates of groundwater users;

The current and future uses of groundwater in the area;

The existing quality of groundwater including other sources of contamination, and their cumulative impact on the groundwater quality;

The potential for health risks caused by human exposure to waste constituents;

The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

The persistence and permanence of the potential adverse effects;

The company acknowledges these considerations that apply to exemption of constituents from the list of hazardous constituents.

2) Potential adverse effects on hydraulically-connected surface water quality, considering:

The volume and physical and chemical characteristics of the waste in the regulated unit.

The hydrogeological characteristics of the facility and surrounding land;

The quantity and quality of groundwater, and the direction of groundwater flow;

The patters of rainfall in the region;

The proximity of the regulated unit to surface waters;

The current and future uses of surface waters and any waters in the area, and any water quality standards established for those surface waters;

The current and future uses of surface waters and any waters in the area, and any water quality standards established for those surface waters;

The existing quality of surface water, including other sources of contamination, and the cumulative impact on surface water quality;

The potential for health risks caused by human exposure to waste constitutents;

The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

The persistence and permanence of the potential adverse effects.

The company acknowledges these considerations that apply to exemption of constituents from the list of hazardous constituents.

18.4 c) In making any determination under §18.4 b) of this section about the use of groundwater in the area around the facility, the Administrative Authority will consider any identification of underground sources of drinking water and exempt aquifers deleted by amendment.

The company acknowledges this section.

18.5 Concentration limits

18.5 a) The Administrative Authority will specify in the facility permit concentration limits in the groundwater for hazardous constituents established under §18.4. The concentration of a hazardous constituent;

1) Must not exceed the background level of that constituent in the groundwater at the time that limit is specified in the permit;

The company acknowledges this requirement and will comply. Please see Attachment 16.

2) For any of the constituents listed in Table 1, must not exceed the respective value given in that Table if the background level of the constituent is below the value given;

The company acknowledges this requirement and will comply. Please see Attachment 16.

3) Must not exceed an alternate limit established by the Administrative Authority under §18.5b) of this section.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.5 b) The Administrative Authority will establish an alternate concentration limit for a hazardous constituent if he finds that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. The Administrative Authority will consider the following factors when setting alternate concentration limits:

1) Potential adverse effects on groundwater quality, considering the information specified in §18.4b)1);

The company acknowledges these factors in setting alternate concentration limits by the Administrative Authority.

2) Potential adverse effects on hydraulically-connected surface water quality, considering the information specified in §18.4b)2).

The company acknowledges these factors in setting alternate concentration limits by the Administrative Authority.

18.5 c) In making any determination under §18.5 b) about the use of groundwater in the area around the facility, the Administrative Authority will consider any identification of underground sources of drinking water and exempt aquifers identified in the permit application under Chapter 3.

The company acknowledges this requirement and will comply.

18.6 Point of Compliance

18.6 a) The Administrative Authority will specify in the facility permit the point of compliance at which the groundwater protection standard of §18.3s) applies and at which monitoring

must be conducted. The point of compliance is a vertical surface located at the hydraulically down gradient limit of the waste management area or the delineated zone of contamination that extends down into the uppermost aquifer underlying the regulated units or the delineated zone of contamination.

The company acknowledges this requirement and will comply.

18.6 b) The wasted management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit.

1) The waste management area includes horizontal space taken up by any liner, dike, or other barrier designed to contain waste in a regulated unit.

The company acknowledges this requirement and will comply.

2) If the facility contains more than one regulated unit, the waste management area is described by an imaginary line circumscribing the several regulated units.

The company acknowledges this requirement and will comply.

18.7 Compliance period

18.7 a) The Administrative Authority will specify in the facility permit the compliance period during which the groundwater protection standard of §18.3 applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity prior to permitting, and the closure period.)

The company acknowledges this requirement and will comply.

18.7 b) The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of §18.10.

The company acknowledges this requirement and will comply.

18.7 c) If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in §18.7a) of this section, the compliance period is extended until the owner or operator can demonstrate that the groundwater protection standard of §18.3 has not been exceeded for a period of three consecutive years.

The company acknowledges this requirement and will comply.

18.8 General groundwater monitoring requirements -- The owner or operator must comply with the following requirements for any ground-water monitoring program developed to satisfy §§18.9, 18.10, or 18.11:

18.8 a) The groundwater monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that:

1) Represent the quality of groundwater that has not been affected by leakage from a regulated unit; and

2) Represent the quality of groundwater passing the point of compliance.

The company acknowledges these requirements and will comply. Please see Attachment 16.

18.8 b) If a facility contains more than one regulated unit, separate groundwater monitoring systems are not required for each regulated unit, if provisions for sampling the groundwater in the uppermost aquifer will enable detection and measurement at the compliance point for hazardous constituents for the regulated units.

The company acknowledges this requirement and will comply.

18.8 c) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring-well bore hole. This

casing must be screened or perforated, and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the ground water.

The company acknowledges these requirements and will comply. Please see Attachment 16.

18.8 d) The groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of groundwater quality below the waste management area. At a minimum, the program must include procedures and techniques for:

1) Sample collection;

2) Sample preservation and shipment;

3) Analytical procedures; and

4) Chain of custody control.

The company acknowledges these requirements and will comply. Please see Attachment 16.

18.8 e) The groundwater monitoring program must include sampling and analytical methods that are appropriate for groundwater sampling, and that accurately measure hazardous constituents in groundwater samples.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.8 f) The groundwater monitoring program must include a determination of the groundwater surface elevation each time groundwater is sampled.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.8 g) Where appropriate, the groundwater monitoring program must establish background groundwater quality for each of the monitoring parameters or constituents specified in the permit.

The company acknowledges this requirement and will comply. Please see Attachment 16.

1) In the detection monitoring program under §18.9, background groundwater quality for a monitoring parameter or constituent must be based on data from quarterly sampling of wells upgradient from the waste management area for one year.

The company acknowledges this requirement and will comply. Please see Attachment 16.

2) In the compliance monitoring program under §18.10, background groundwater quality for a hazardous constituent must be based on data from upgradient wells that:

Is available before the permit is issued;

Accounts for measurement errors in sampling and analysis;

Accounts, to the extent feasible, for seasonal fluctuations in background groundwater quality, if such fluctuations are expected to affect the concentration of the hazardous constituent.

The company acknowledges these requirements and will comply. Please see Attachment 16.

3) Upon approval of the Administrative Authority, background quality may be based on sampling of wells that are not upgradient from the waste management area where:

Hydrogeologic conditions do not allow the owner or operator to determine what wells are upgradient;

Sampling at other wells will provide an indication of background ground-water quality that is as representative or more representative than that provided by the upgradient wells.

The company acknowledges these requirements and will comply. Please see Attachment 16.

4) In developing the data base used to determine a background value for each parameter or constituent, the owner or operator must take a minimum of one sample from each well and a minimum of four samples from the entire system used to determine background groundwater quality each time the system is sampled.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.8 h) The owner or operator must use the following statistical procedure in determining whether background values or concentrations limits have been exceeded:

1) If, in a detection monitoring program, the level of a constituent at the compliance point is to be compared to the constituent's background value and that background value has a sample coefficient of variation less than 1.00:

The owner or operator must take at least four portions from a sample at each well at the compliance point and determine whether the difference between the mean of the constituent at each well (using all portions taken) and the background value for the constituent is significant at the 0.05 level using the Cochran's Approximation to the Behrens-Fisher Student's t-test as described in Table 2 of this Chapter. If the test indicates that the difference is significant, the owner or operator must repeat the same procedure (with at least the same number of portions as used in the first test) with a fresh sample from the monitoring well. If this second round of analyses indicates that the difference is significant, the owner or operator must conclude that a statistically significant change has occurred;

The owner or operator may use an equivalent statistical procedure for determining whether a statistically significant change has occurred. The Administrative Authority will specify such a procedure in the facility permit if he finds that the alternative procedure reasonably balances the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identity a contaminating regulated unit and the probability of failing to identify a contaminating regulated unit in a manner that is comparable to that of the statistical procedure described in §18.8h)1) of this section.

The company acknowledges this requirement and will comply. Please see Attachment 16.

2) In all other situations in a detection monitoring program and in a compliance monitoring program, the owner or operator must use a statistical procedure providing reasonable confidence that the migration of hazardous constituents from a regulated unit into and through the aquifer will be indicated. The Administrative Authority will specify a statistical procedure in the facility permit that he finds:

Is appropriate for the distribution of the data used to establish background values or concentration limits;

Provides a reasonable balance between the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identity a contaminating regulated unit.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.8 i) The groundwater monitoring program must insure that the permittee maintains records from all required groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility including the operating, closure, and post-closure care periods.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.9 Detection monitoring program -- An owner or operator required to establish a detection monitoring program under this subpart must, at a minimum, discharge the following responsibilities:

18.9 a) The owner or operator must monitor for indicator parameters (e.g., specific conductance, total organic carbon, or total organic halogen), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in groundwater. The Administrative Authority will specify the parameters or constituents to be monitored in the facility permit, after considering the following factors:

1) The types, quantities, and concentrations of constituents in wastes managed at the regulated unit;

2) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the waste management area;

3) The detectability of indicator parameters, waste constituents, and reaction products in groundwater;

4) The concentrations or values, and coefficients of variation of proposed monitoring parameters or constituents in the groundwater background.

The company acknowledges these requirements and will comply. Please see Attachment 16.

18.9 b) The owner or operator must install a groundwater monitoring system at the compliance point as specified under §18.6. The groundwater monitoring system must comply with §§18.8a)2), 18.8b), and 18.8c);

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.9 c) The owner or operator must establish a background value for each monitoring parameter or constituent specified in the permit pursuant to §18.9a) of this section. The permit will specify the background values for each parameter or specify the procedures to be used to calculate the background values.

The company acknowledges this requirement and will comply. Please see Attachment 16.

1) The owner or operator must comply with §18.8g) in developing the data base used to determine background values.

The company acknowledges this requirement and will comply. Please see Attachment 16.

2) The owner or operator must express background values in a form necessary for the determination of statistically significant increases under §18.8h).

The company acknowledges this requirement and will comply. Please see Attachment 16.

3) In taking samples used in the determination of background values, the owner or operator must use a groundwater monitoring system that complies with §§18.8a)1), 18.8b), and 18.8c).

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.9 d) The owner or operator must determine groundwater quality at each monitoring well at the compliance point at least semi-annually during the active life of a regulated unit (including the closure period) and the post-closure care period. The owner or operator must express the groundwater quality at each monitoring well in a from necessary for the determination of statistically significant increases under §18.8h). The Administrative Authority may require the owner or operator to run specific indicator parameters on a more frequent schedule;

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.9 e) The owner or operator must determine the groundwater flow rate and direction in the uppermost aquifer at least annually;

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.9 f) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of §§18.8d) and 18.8e);

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.9 g) The owner or operator must determine whether there is a statistically significant increase over background values for any parameter or constituent specified in the permit pursuant to 18.9a) of this section each time he determines groundwater quality at the compliance point under §18.9d).

The company acknowledges this requirement and will comply. Please see Attachment 16.

1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the groundwater quality at each monitoring well, at the compliance point for each parameter or constituent, to the background value for that parameter or constituent, according to the statistical procedure specified in the permit under §18.8h).

The company acknowledges this requirement and will comply. Please see Attachment 16.

2) The owner or operator must determine whether there has been a statistically significant increase at each monitoring well, at the compliance point, within a reasonable time period after completion of sampling. The administrative authority will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of groundwater samples.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.9 H) If the owner or operator determines, pursuant to §18.9g), that there is a statistically significant increase for parameters or constituents specified pursuant to §18.9a) at any monitoring well at the compliance point, he must:

1) Notify the Administrative Authority of this finding in writing within seven days. The notification must indicate what parameters or constituents have shown statistically significant increases;

The company acknowledges this requirement and will comply. Please see Attachment 16.

2) Immediately sample the groundwater in all monitoring wells and determine the concentration of all constituents identified in Table 1 of Chapter 17 that are present in groundwater;

The company acknowledges this requirement and will comply. Please see Attachment 16.

3) Establish a background value for each constituent that has been found at the compliance point under §18.9h)2), as follows:

The owner or operator must comply with §18.8g) in developing the data base used to determine background values;

The owner or operator must express background values in a form necessary for the determination of statistically significant increases under §18.8h);

In taking samples used in the determination of background values, the owner or operator must use a groundwater monitoring system that complies with §§18.8a)1), 18.8b), and 18.8c);

The company acknowledges these requirements and will comply. Please see Attachment 16.

4) Within ninety days, submit, to the Administrative Authority, an application for a permit modification to establish a compliance monitoring program meeting the requirements of §18.10. The application must include the following information:

An identification of the concentration of any constituent in Table 1 in Chapter 17, found in the groundwater at each monitoring well at the compliance point;

Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements of §18.10;

Any proposed changes to the the monitoring frequency, sampling and analysis procedures or methods, or statistical procedures used at the facility necessary to meet the requirements of §18.10;

For each hazardous constituent found at the compliance point, a proposed concentration limit under §§18.5a)1), 18.5a)2), or a notice of intent to seek a variance under §18.5b);

The company acknowledges these requirements and will comply. Please see Attachment 16.

5) With 180 days, submit to the Administrative Authority:

All data necessary to justify any variance sought under §18.5b)

An engineering feasibility plan for a corrective action program necessary to meet the requirements of §18.5) unless:

All hazardous constituents identified under §18.9h)2) are listed in Table 1 of §18.5 and their concentrations do not exceed the respective values given in that Table; or

The owner or operator has sought a variance under §18.5b) for every hazardous constituent identified under §18.9h)2).

The company acknowledges these requirements and will comply. Please see Attachment 16.

18.9 i) If the owner or operator determines, pursuant to §18.9g), that there is a statistically significant increase in the parameters or constituents specified pursuant to §18.9a), at any monitoring well at the compliance point, he must demonstrate that source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under this Chapter in addition to, or in lieu of, submitting a permit modification application under §18.9h)4), he is not relieved of the requirement to submit a permit modification application within the time specified in §18.9h)4) unless the demonstration made under this Chapter successfully shows that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. In making a demonstration under this Chapter, the owner or operator must:

1) Notify the Administrative Authority in writing within seven days of determining a statistically significant increase at the compliance point that he intends to make a demonstration under this Chapter;

The company acknowledges this requirement and will comply. Please see Attachment 16.

2) Within ninety days, submit a report to the Administrative Authority which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation;

The company acknowledges this requirement and will comply. Please see Attachment 16.

3) Within ninety days, submit to the Administrative Authority an application for a permit modification to make any appropriate changes to the detection monitoring program at the facility;

The company acknowledges this requirement and will comply. Please see Attachment 16.

4) Continue to monitor in accordance with the detection monitoring program established under this Chapter.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.9 j) If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of this Chapter, he must, within ninety days, submit an application for a permit modification to make any appropriate changes to the program;

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.9 k) The owner or operator must assure that monitoring and corrective action measures necessary to achieve compliance with the groundwater protection standard under §18.3 are taken during the term of the permit.

The company acknowledges this requirement and will comply. Please see Attachment 16.

4/7/84

ATTACHMENT 10

CLOSURE PLAN

V. FACILITY CLOSURE PLAN

The purpose of this document is to meet the requirements of the state and Federal Government with regard to closure plans for hazardous waste facilities. More specifically, this plan is for the closure of surface impoundments at wood preserving plants having the listed waste K001. The EPA defines K001 as a hazardous waste from a specific industrial source. The industry is "Wood Preservation" and the waste is "Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.

For this facility, sludge shall mean, "any measurable buildup of sediment that is the result of chemical coagulation/sedimentation or gravity settling containing visible quantities of the wood preserving chemicals from creosote and/or pentachlorophenol operations." Measurable buildup shall mean, "a thickness determined by a scale such as a carpenter's rule or surveyor's rod of an undisturbed sample of material." This definition specifically excludes process water from wood preserving plants and soils and groundwater that have become contaminated from process water. Soils that have become contaminated by the sludge shall be considered as being diluted with the hazardous waste K001, and therefore, considered a hazardous waste.

The goal of the company is to close the facility in a manner that minimizes the need for further maintenance, and controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of ~~hazardous waste~~, hazardous waste constituents, leachate, contaminated rainfall or waste decomposition products to the groundwater or surface waters or to the atmosphere. However, closure selection and procedures shall be within the financial restraints that are reasonable to the company.

A. The owner or operator shall keep this written closure plan at the facility. This plan identifies the steps necessary to completely close the facility at any point during its intended life and at the end of its intended life.

A.1. The company intends to close the facility by a combination of recovery for reuse of those materials that can be reused and to excavate the remaining material and haul to a hazardous waste disposal site. The company does not intend to partially close the facility at this time. Closure would be a single-step procedure. The company intends to operate the facility in perpetuity with no limit to the life of the facility. This is possible because of operational and process changes at the facility designed to minimize the quantity of additional K001 waste that is deposited in surface impoundments. The objective is for the impoundment to be a storage facility for previously generated material rather than a facility that continues to accumulate hazardous materials to the point where it will become filled at some future date. Additional steps shall be taken to recover greater quantities of hazardous waste for reuse than are presently being done. There are no plans to construct additional surface impoundments. The maximum extent of the hazardous waste operation is the areal and volume extent of any existing surface impoundment less 2 feet of impoundment depth for freeboard. Please see the table under section A2 for the maximum extent of the operation.

Since the K001 buildup is very slow and opportunities for recovery are available, impoundments at wood preserving facilities are essentially operating units in the process rather than ultimate disposal units. As long as a company uses a surface impoundment in the system, an expected date when the impoundment is full is not applicable. Therefore, for the purposes of the regulations, an artificial time period to closure shall be used. This time period shall be for the length of an EPA permit period of 10 (ten) years from the date of the original closure cost estimate that is based on this plan. This would be a closure date of ten years plus April 7, 1984.

The closure plan is based on the experience in the industry that the K001 sludge has relatively low mobility and rate of migration. The plans consider the site location, the topography and the surrounding land use. Also taken into consideration are the climate and annual precipitation factors at the site. The existing geological information at the site has been researched. This includes information on surface profiles, surface and subsurface hydrology. This information is available in other documents kept at the site and by the consulting

engineer. The unsaturated zone has been profiled but is not monitored. The type of hazardous material is the K001 sludge. The presence of the material is the visual measurement as described above rather than a percentage or concentration of a constituent in the soil or in the water. There should be no background concentration of K001 sludge in the environment.

The tasks for the plan for closure are outlined below in nine steps. The plan will not change in the event that closure occurs before the "artificial" date of ten years from the date of this plan.

1. Remove any surface oil from the impoundment. The closure cost estimate shall be based on using an oil spill recovery device manufactured by Oil Mop ®.

2. Remove all water from the impoundment through enhanced evaporation, by discharge to a municipal system, or through an agreement with the state for a direct discharge. The closure cost estimate will provide for enhanced evaporation. Prior to installing the enhanced evaporation, the surrounding area shall be regraded, if necessary, to prevent any surface runoff from entering an impoundment.

The enhanced evaporation system shall be provided by installing spray nozzles on 10 foot centers throughout the impoundment. This nozzle density results in a theoretical evaporation of about 100 gallons per day per 100 square feet of surface area.

3. Recover for sale or reuse of all sludges that can be easily recovered. The closure cost estimate shall be based on using the oil spill device manufactured by Oil Mop ®. An alternate method will be to pump K001 sludge to above ground tanks for recovery and reuse.

4. Strip the dry impoundment of sludge and contaminated soil by pushing with a dozer from one side of the impoundment to the other. Strip sufficient soil to "dewater" any wet sludge that remains.

5. Excavate the material from the impoundment and load into trucks for transport to a hazardous waste material disposal site.

6. Haul in local material to return the site to the original contours. Material hauled to the site shall be compacted in 12 (twelve) inch maximum lifts using standard compaction equipment such as sheeps foot rollers. Field soil density measurements shall be taken of each 12 (twelve) inch layer of the top 3 (three) feet of soil with at least one series of tests per 1000 (one thousand) square yards. Density values shall be within 95% of optimum.

Any rainwater that falls into the impoundment during this step shall be pumped to the treating plant for disposal or reuse. Because this step involves filling a hole with material, erosion is not a problem and an erosion control program is not applicable.

The surface of the filled impoundment shall be finished to match existing contours.

7. The site shall be finished by 1) fertilizing and seeding the area to provide a grass cover, or 2) hauling in gravel or other paving material for the site. The purpose of this step shall be to return the area for use by the company.

The quantity and type of fertilizer and grass seed shall be consistent with current agricultural practices in the area and with assistance from the local agricultural agent.

8. The existing groundwater monitoring program shall continue for the facility during the closure phase. Groundwater monitoring procedures are kept at the facility in a different document.

9. The existing security procedures including maintenance of fences, gates, signs, etc shall be continued during the closure phase.

The cost for the closure plan is as follows:

DETAILED CLOSURE COST ESTIMATE

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL AMOUNT
1	Recover Surface Oil				
	Equipment cost	month	NONE		
	Operating cost	month			
	Recovery Value	gal			
2	Remove Water*				
	Install System**	acre	1.2	5,500	6,600
	Operate System	month	5	200	1,000
3	Recover Usable Sludge				
	Equipment cost	month	NONE		
	Operating cost	month			
	Recovery Value	gal			
4.	Strip Impoundment				
	Equipt & Op. cost	cu yard	5,600	25/	1400
5.	Haul to Landfill				
	Load material	cu yard	5,600	50/	2,800
	Haul material	ton-mile	816,480	08/	63,300
	Disposal cost	ton	7,560	25	189,000
6.	Haul in Fill				
	Excavation cost	cu yard	5,600	25/	1,400
	Huling cost	cu yard	5,600	50/	2,800
	Compaction cost	cu yard	5,600	25/	1,400
	Testing cost	lump sum	each	-	1000
	Grading cost	sq yard	5,800	10/	600
	Decontam. Equipt.	tons	0.1	30	3
7	Provide Grass Cover	sq yard	5,800	25/	1,500
8	Groundwater monit.	lump sum	each	-	6,100
9	Security measures	lump sum	each	-	1,400

CLOSURE PLAN ESTIMATE CONTINUED

10	Certification	hours	40	40	1,600

Total Cost for Closure = $ 283,900

Total Cost per CY = 50.70 $/CY

* Includes cost to dismantle evaporation system
** Volume of water removed = 202,000 gallons @ $0.04 /gal

Note: All estimates include 20 % for contingencies

A2. The following is an estimate of the maximum inventory of wastes that could be stored based on the assumption that impoundments are filled with sludge and the actual measured quantity of sludge.

EXTENT OF OPERATION

IMPOUNDMENT	SURFACE AREA sq.ft.	TOTAL DEPTH ft	MEAS. WASTE DEPTH ft.	TOTAL VOLUME CY	MEAS. WASTE VOLUME CY	MAX WASTE VOLUME CY
1	52,000	9	2'-6"	17,300	4,000	13,500
2						
3						
4						

TOTAL WASTE VOLUME = 4,000 CY

TOTAL CONT.SOIL VOL= 1,600 CY

TOTAL SOIL & WASTE = 5,600 CY

A.3 The following is a list of steps shall be used to decontaminate any facility equipment during closure. The K001 sludge is basically a diluted form of the preservative used at the facility and the care of decontamination would not need to be any greater than the care associated with the operation and cleaning of equipment used at any wood preserving plant.

1. Knock off all loose material from equipment with a shovel or other hand tool. Perform this initial cleanup within the impoundment site.

2. Knock off all material from hand tools within the impoundment site.

3. Wash down any further contamination by using a solvent spray such as diesel fuel. Allow drippings to flow into a concrete sump for recovery and reuse.

4. The type of waste at this facility and the method of closure do not require disposing of any equipment. The only equipment that would come into contact with the waste would be the tractor and compaction equipment. The trucks hauling in the fill material should not become contaminated. Hand tools would become contaminated when used to remove contamination from the tractor and compaction equipment.

A.4 The following schedule for final closure is provided based on the anticipated time for each of the above steps in the closure plan.

CLOSURE TIMETABLE

STEP	DESCRIPTION	TIME REQUIRED	ACCUMULATED TIME
1	Recover Surface Oil	1 month	1 month
2	Remove Water	6 months	7 months
3	Recover Usable Sludge	2 months	9 months
4	Strip the pit	1 months	10 months

5	Excavate & Dispose	1 months	10 months*
6	Fill & Grade Area	1 month	11 months
7	Provide Cover	1 month	12 months

Note: Hauling & compacting steps performed at same time and items 8 - 10 proceed with the major items of work.

Total Time Required = 12 months

B. The company may amend this closure plan at any time during the active life of the facility. (The active life of the facility is that period during which wastes are periodically received) The company shall amend this plan any time changes in operating plans or facility design affect the closure plan.

C. The company shall submit this closure plan to the state at least 180 days before the date the company expects to begin closure. The state will modify, approve or disapprove the plan within 90 days of receipt and after providing the company and the affected public (through a newspaper notice) the opportunity to submit written comments.

D. Within 90 days after receiving the final volume of hazardous wastes, the company shall treat all hazardous wastes in storage or in treatment, or remove them from the site, or dispose of them on-site, in accordance with the approved closure plan.

E. The company shall complete closure activities in accordance with the approved closure plan. The state regulations also require that a site shall be closed within six months after receiving the final volume of wastes. However, there is a provision to close under a longer period of time if requested and approved by the board providing the company demonstrate that 1) the required or planned closure activities will, of necessity, take longer than six months to complete, and 2) that the company has taken all steps to eliminate any significant threat to human health and the environment from the unclosed but inactive facility. The company intends to request a longer period of time and intends to demonstrate items 1) and 2) above to the satisfaction of the state.

F. When closure is completed, all facility equipment and structures shall be properly disposed of or decontaminated by removing all hazardous waste and residues according to item A.3 of this plan.

G. When closure is completed, the company shall submit to the state certification both by the company and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

The certification shall be based on personal inspections by the independent registered professional engineer during the closure phase. At least one visit shall be made to the site during the first three steps of recovery and evaporation. The engineer shall make a careful inspection during the stripping phase to ensure that all contaminated material has been stripped. The engineer shall carefully inspect the impoundment at the end of the excavation step to ensure that all contaminated material has left the site. The engineer shall approve of the fill material at the borrow pit during the fill and grade step. The engineer or his designated representative shall be present during the excavation, hauling, placement and compaction of the fill. The engineer shall approve the final surface contours and quantity and type of cover material. The engineer shall make a final inspection after all work is completed.

ATTACHMENT 11

POST-CLOSURE PLAN VI-1 TO VI-2

CONTINGENCY POST-CLOSURE PLAN C-VI-1 TO C-VI-6

VI. POST CLOSURE PLAN

This post closure plan is based on a closure plan by disposal at an approved hazardous waste disposal facility. This plan covers the maximum area that contained hazardous wastes before closure to include surface impoundments. Since all of the material is hauled away from the facility, this plan does not provide for a 30 year period of post closure care. The plan covers all areas where hazardous waste existed that were active as of and after November 19, 1980.

The activities addressed by this plan are outlined as follows:

1. Continuing the groundwater monitoring program.
2. Maintenance plan for any closed impoundments.
3. Maintenance plan for the monitoring equipment.
4. Security plan.
5. Post-closure period contact.
6. Official notice to the local land authority.
7. Notice in the deed of the property.
8. Plan to protect and maintain surveyed benchmarks.

More specific information for each of the above activities is provided in the following sections.

GROUNDWATER MONITORING:

The existing groundwater monitoring program that is presented in a separate document kept at the facility shall be followed during closure activities only and ended at the point of certification of closure.

IMPOUNDMENT MAINTENANCE:

Since all hazardous material is removed from the site there shall be no ongoing maintenance program for the purpose of maintaining the integrity of any closed impoundment area.

MONITORING EQUIPMENT MAINTENANCE:

Once closure is complete and accepted by the state, the ongoing maintenance program to maintain the integrity of the groundwater monitoring equipment shall stop. Monitor wells shall be plugged at the option of the company.

SECURITY PLAN:

The security plan followed during the operation of the facility and during closure shall stop as soon as the closure certification is accepted by the state.

POST-CLOSURE PERIOD CONTACT:

Since all material was removed at closure, no individual shall act as the post-closure period contact for this facility.

NOTICE TO LOCAL LAND AUTHORITY:

The company shall not give notice to the local land authority as to the location, quantity and substance contained in any closed impoundment.

NOTICE IN DEED TO PROPERTY:

The company shall not record a notation in the deed that the property has been used to manage hazardous waste because a hazardous waste disposal site will not remain on the property. There shall be no information on the restriction of use for that portion of the property that contained any impoundment.

PLAN TO PROTECT SURVEY BENCHMARKS:

The company shall have no need to protect any benchmarks that were used during the active and closure phases of any impoundments. If any benchmarks are disturbed or lost, they may be replaced at the option of the company.

POST-CLOSURE COST ESTIMATE:

Since there are no post-closure activities required, there is no post-closure cost estimate.

C-VI. CONTINGENCY POST CLOSURE PLAN

This post closure plan shall be followed after the facility Closure Plan has been completed as outlined in Section V. of the facility hazardous waste documents and if sufficient material remains after closure that the primary post closure plan cannot be followed. The plan covers the maximum area expected to contain hazardous wastes after closure to include surface impoundments. This plan provides for a 30 year period of post closure care. The plan covers all areas where hazardous waste will remain that were active as of November 19, 1980.

The activities required by regulation and included in this plan are outlined as follows:

1. Continuing the groundwater monitoring program.
2. Maintenance plan for any closed impoundments.
3. Maintenance plan for the monitoring equipment.
4. Security plan.
5. Post-closure period contact.
6. Official notice to the local land authority.
7. Notice in the deed of the property.
8. Plan to protect and maintain surveyed benchmarks.

Specific tasks for each of the above activities are provided in the following sections.

GROUNDWATER MONITORING:

The existing groundwater monitoring program that is presented in a separate document kept at the facility shall be followed during post closure activities for a period of 30 years. This program includes sampling each monitoring well on a periodic basis and transmitting the data to the state. Also in the plan is a provision for a statistical analysis of the data. The plan includes a map indicating the number and location of the

wells, sample collection activities and frequencies, sample test activities and sample test frequencies. A copy of the monitoring program details are attached at the end of this document.

Should any of the wells plug or become unusable for any reason, a replacement well shall be constructed that is completed to the same strata, is of similar construction of the other well and as close to the same location as possible to the other well. Well construction and plugging shall be according to state regulations and requirements.

IMPOUNDMENT MAINTENANCE:

An ongoing maintenance program shall be initiated at closure to maintain the integrity of any closed impoundment. Included in the plan are provisions for inspecting the area of any former impoundments on a quarterly basis. Items to inspect shall include evidence of erosion of the final cover, lack of vegetation and fertilizer, if applicable, mowing of a grass cover, and insuring that rainfall flows away from the center of any closed impoundment and rainwater outside the area does not flow across any closed impoundment. If a quarterly inspection indicates a problem or work to be done, the work shall be scheduled and completed before the following quarterly inspection. A recommended inspection checklist is included at the end of this document.

MONITORING EQUIPMENT MAINTENANCE:

An ongoing maintenance program shall be initiated at closure to maintain the integrity of the groundwater monitoring equipment. Included in the plan are provisions for inspecting each of the wells for problems such as possible surface leakage, rusting or broken covers, locks that do not work or are lost, wells that are silted in or plugged, etc. Each well shall be inspected on a quarterly basis and repairs or replacements completed prior to the next quarterly inspection. A recommended inspection checklist is included at the end of this document.

SECURITY PLAN:

A security plan shall be initiated at closure to maintain the security of any impoundment site and monitor wells. Included in the plan are provisions for inspecting any fences, gates, locks, signs and looking for evidence of vandalism. A security inspection shall be made on a quarterly basis. If any

security problems are found during the inspection, repairs and replacements shall be completed prior to the next quarterly inspection. A recommended inspection checklist is included at the end of this document.

POST-CLOSURE PERIOD CONTACT:

The following individual shall act as the post-closure period contact for this facility:

Name: CLYDE M. NORTON, V.P.

Address: Colfax Creosoting Co.
P.O. Box 231
Pineville, LA 71360

Phone Number: 318-442-2467

NOTICE TO LOCAL LAND AUTHORITY:

The company shall give notice to the local land authority as to the location, quantity and substance contained at the site providing sufficient material remains after closure that the regulatory agency requires this step. If this step is required, the location shall be documented on a topographic map of the area and a copy of the map presented to the local land authority.

NOTICE IN DEED TO PROPERTY:

If sufficient material remains at the site after closure as determined by the regulatory agency, the company shall record a notation in the deed that the property has been used to manage hazardous waste and some quantities of material remain on the property. If this step is required, the company shall included information on the restriction of use for that portion of the property and the availability of monitoring and site maintenance should the property be sold within the 30 year monitoring period. Information shall be provided indicating the location of material, the type of material and the quantity of material.

PLAN TO PROTECT SURVEY BENCHMARKS:

Because of the importance of knowing the exact location of any former hazardous waste management site, it shall be a part of the maintenance inspection to determine that all survey benchmarks used in locating the site are in good repair. If any benchmarks are found disturbed or in bad repair, they shall be re-established before the following quarterly inspection. This item is included in the recommended inspection checklist included at the end of this document. This step shall not apply if the regulatory agency does not determine that significant quantities of material remain after closure.

Certain other objectives shall be fulfilled during the post-closure period. These include the control of pollution migration via the ground or surface water, the control of surface water infiltration and the prevention of erosion. Erosion, surface water infiltration and pollution of surface water shall be apart of the quarterly maintenance program. Groundwater pollution problems shall be handled according to the outline of steps in the groundwater monitoring program provided at the end of this document.

This post-closure plan was developed based on the type and amount of the waste, the mobility and rate of migration, the site location, topography of the area and the surrounding land use. Also considered were the climate and precipitation factors. Additional factors include the characteristics of the cover, including material, final surface contours, thickness, porosity, permeability, slope and vegetation. The published geological and soil profiles have been reviewed as well as the surface and subsurface hydrology. Since the material tends to migrate to the water table, a knowledge of the unsaturated zone with regard to monitoring is not applicable. The K001 waste is not a naturally occurring chemical constituent in the environment and therefore background concentrations do not apply.

YEARLY POST CLOSURE COST ESTIMATE

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
1.	Inspection Visits	hrs	8	$10	$80
2.	Final Cover Maint.	sq.yd.	5,800	5¢	290

3.	Fertilizing	sq.yd.	5,800	2¢	$120
4.	Mowing	sq.yd.	5,800	2¢	120
5.	Well Maintenance	per well	4	$20	80
6.	Monitoring	per well	4	$750	3000
7.	Security Maint.	ft of fence	160	10¢	20
8.	Administrative	hrs	4	$10	40

Total Cost per Year = $3,750

Other one-time expenses are as follows:

1. Notice to local land authority = $100
2. Notice in deed = 100

Total other costs = $200

TOTAL POST-CLOSURE COST ESTIMATE

1. Total yearly cost estimate = $3,750
   x 30 years
   30 years of post-closure = $112,500
2. Total other costs = 200
3. Total Post-closure Cost = $112,700

POST CLOSURE QUATERLY CHECKLIST

DATE OF INSPECTION: _____

NAME OF INSPECTOR: _____

ITEM	DESCRIPTION	DEFICIENCY

MAINTENANCE ITEMS

1. Evidence of Erosion
2. Cover Vegetation
3. Need for Fertilizer
4. Need for Mowing
5. Ponding on Cover
6. Rainfall runon

MONITOR WELL ITEMS

1. Surface Leakage to Wells
2. Rusting or Broken Well Covers
3. Integrity of Locks
4. Indication of Well Plugging

SECURITY ITEMS

1. Integrity of Fences & Gates
2. Integrity of Locks
3. Integrity and Status of Signs
4. Evidence of Vandalism
5. Integrity of Benchmarks

INSPECTOR'S SIGNATURE: _____

18.10 Compliance monitoring program -- An owner or operator required to establish a compliance monitoring program under this Chapter must, at a minimum, discharge the following responsibilities:

18.10 a) The owner or operator must monitor the groundwater to determine whether regulated units are in compliance with the groundwater protection standard under §18.3. The Administrative Authority will specify the groundwater protection standard in the facility permit, including:

1) A list of the hazardous constituents identified under §18.4;

The company acknowledges this requirement and will comply. Please see Attachment 16.

2) Concentration limits under §18.5 for each of those hazardous constituents;

The company acknowledges this requirement and will comply. Please see Attachment 16.

3) The compliance point under §18.6;

The company acknowledges this requirement and will comply. Please see Attachment 16.

4) The compliance period under §18.7.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.10 b) The owner or operator must install a groundwater monitoring system at the compliance point as specified under §18.6. The groundwater monitoring system must comply with §§18.8a)2), 18.8b), and 18.8c);

18.10 c) Where a concentration limit established under §18.5 is based on background groundwater quality, the Administrative Authority will specify the concentration limit in the permit as follows:

1) If there is a high temporal correlation between upgradient and compliance point concentrations of the hazardous constituents, the owner or operator may establish the concentration limit through sampling at upgradient wells each time groundwater is sampled at the compliance point. The Administrative Authority will specify the procedures used for determining the concentration limit in this manner in the permit. In all other cases, the concentration limit will be the mean of the pooled data on the concentration of the hazardous constituent;

The company acknowledges this requirement and will comply.

2) If a hazardous constituent is identified in Table 1 under §18.5 and the difference between the respective concentration limit in Table 1 and the background value of that constituent under §18.8g) is not statistically significant, the owner or operator must use the background value of the constituent as the concentration limit. In determining whether this difference is statistically significant, the owner or operator must use a statistical procedure providing reasonable confidence that a real difference will be indicated. The statistical procedure must:

Be appropriate for the distribution of the data used to establish background water;

Provide a reasonable balance between the probability of falsely identifying a significant difference and the probability of failing to identity a significant difference.

The company acknowledges these requirements and will comply.

3) The owner or operator must:

Comply with §18.8g) in developing the data base used to determine background values;

The company acknowledges this requirement and will comply.

Express background values in a form necessary for the determination of statistically significant increases under §18.8h);

The company acknowledges this requirement and will comply.

Use a groundwater monitoring system that complies with §§18.8a)1), 18.8b), and 18.8c).

The company acknowledges this requirement and will comply.

18.10 d) The owner or operator must determine the concentration of hazardous constituents in groundwater at each monitoring well at the compliance point at least quarterly during the compliance period. The owner or operator must express the concentration at each monitoring well in a form necessary for the determination of statistically significant increases under §18.8h);

The company acknowledges this requirement and will comply.

18.10 e) The owner or operator must determine the groundwater flow rate and direction in the uppermost aquifer at least annually;

The company acknowledges this requirement and will comply.

18.10 f) The owner or operator must analyze samples from all monitoring wells at the compliance point for all constituents in Table 1 of Chapter 17 at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer. If the owner or operator finds Table 1 of Chapter 17 constituents in the groundwater that are not identified in the permit as hazardous constituents, the owner or operator must report the concentrations of these additional constituents to the Administrative Authority within seven days after completion of the analysis;

The company acknowledges this requirement and will comply.

18.10 g) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of §§18.8d) and 18.8e);

The company acknowledges this requirement and will comply.

18.10 h) The owner or operator must determine whether there is a statistically significant increase over the concentration limits for any hazardous constituents specified in the permit pursuant to §18.10a) of this Chapter each time he determines the concentration of hazardous constituents in groundwater at the compliance point.

The company acknowledges this requirement and will comply.

1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the groundwater quality at each monitoring well at the compliance point for each hazardous constituent to the concentration limit for that constituent according to the statistical procedures specified in the permit under §18.8h).

The company acknowledges this requirement and will comply.

2) The owner or operator must determine whether there has been a statistically significant increase at each monitoring well at the compliance point, within a reasonable time period after completion of sampling. The Administrative Authority will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of groundwater samples.

The company acknowledges this requirement and will comply.

18.10 i) If the owner or operator determines, pursuant to §18.10h), that the groundwater protection standard is being exceeded at any monitoring well at the point of compliance, he must:

1) Notify the Administrative Authority of this finding in writing within seven days. The notification must indicate what concentration limits have been exceeded;

The company acknowledges this requirement and will comply.

2) Submit to the Administrative Authority, an application for a permit modification to establish a corrective action program meeting the requirements of §18.11 within 180 days, or within ninety days if an engineering feasibility study has been previously submitted to the Administrative Authority under §18.9h)5). The application must at a minimum include the following information:

A detailed description of corrective actions that will achieve compliance with the groundwater protection standard specified in the permit under §18.10a);

The company acknowledges this requirement and will comply.

A plan for a groundwater monitoring program that will demonstrate the effectiveness of the corrective action. Such a groundwater monitoring program may be based on a compliance monitoring program developed to meet the requirements of this section.

The company acknowledges this requirement and will comply.

18.10 j) If the owner or operator determines, pursuant to §18.10h), that the groundwater protection standard is being exceeded at any monitoring well at the point of compliance, he may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from an error in sampling, analysis or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under §18.10i)2) of this section, he is not relieved of the requirement to submit a permit modification application with the time specified in §18.10i)2) of this section unless the demonstration made under this paragraph successfully shows that a source other than a regulated unit caused the increase or that

the increase resulted from an error in sampling, analysis or evaluation. In making a demonstration under this paragraph, the owner or operator must:

1) Notify the Administrative Authority in writing within seven days that he intends to make a demonstration under this paragraph;

The company acknowledges this requirement and will comply.

2) Within ninety days, submit a report to the Administrative Authority which demonstrates that a source other than a regulated unit caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis or evaluation;

The company acknowledges this requirement and will comply.

3) Within ninety days, submit to the Administrative Authority an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility;

The company acknowledges this requirement and will comply.

4) Continue to monitor in accord with the compliance monitoring program established under this Chapter.

The company acknowledges this requirement and will comply.

18.10 k) The the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of this section, he must, within ninety days, submit an application for a permit modification to make any appropriate changes to the program;

The company acknowledges this requirement and will comply.

18.10 1) The owner or operator must assure that monitoring and corrective action measures necessary to achieve compliance with the groundwater protection standard under §18.3 are taken during the term of the permit.

The company acknowledges this requirement and will comply. Please see Attachment 16.

18.11 Corrective action program -- An owner or operator required to establish a corrective action program under this subpart must, at a minimum, discharge the following responsibilities:

18.11 a) The owner or operator must take corrective action to ensure that regulated units are in compliance with the groundwater protection standard under §18.3. The Administrative Authority will specify the groundwater protection standard in the facility permit, including:

1) A list of the hazardous constituents identified under §18.4;

2) Concentration limits under §18.5 for each of those hazardous constituents;

3) The compliance point under §18.6;

4) The compliance period under §18.7.

The company acknowledges these requirements and will comply.

18.11 b) The owner or operator must implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place. The permit will specify the specific measures that will be taken;

The company acknowledges this requirement and will comply.

18.11 c) The owner or operator must begin corrective action with a reasonable time period after the groundwater protection

standard is exceeded. The Administrative Authority will specify that time period in the facility permit. If a facility permit includes a corrective action program in addition to a compliance monitoring program, the permit will specify when the corrective action will begin and such a requirement will operate in lieu of §18.10i)2);

The company acknowledges this requirement and will comply.

18.11 d) In conjunction with a corrective action program, the owner or operator must establish and implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a compliance monitoring program under §18.10 and must be as effective as that program in determining compliance with the ground-water protection standard under §18.3 and in determining the success of a corrective action program under §18.11 e), where appropriate;

The company acknowledges this requirement and will comply.

18.11 e) In addition to the other requirements of this section, the owner or operator must conduct a corrective action program to remove or treat in place any hazardous constituents under §18.4 that exceed concentration limits under §18.5 in groundwater between the compliance point under §18.6 and the down gradient facility property boundary. The permit will specify the measures to be taken.

The company acknowledges this requirement and will comply.

1) Corrective action measures under this paragraph must be initiated and completed within a reasonable period of time considering the extent of contamination.

The company acknowledges this requirement and will comply.

2) Corrective action measures under this paragraph may be terminated once the concentration of hazardous constituents under

§18.4 is reduced to levels below their respective concentration limits under §18.5.

The company acknowledges this requirement and will comply.

18.11 f) The owner or operator must continue corrective action measures during the compliance period to the extent necessary to ensure that the groundwater protection standard is not exceeded. If the owner or operator is conducting corrective action at the end of the compliance period, he must continue that corrective action for as long as necessary to achieve compliance with the groundwater protection standard. The owner or operator may terminate corrective action measures taken beyond the period equal to the active live of the waste management area (including the closure period) if he can demonstrate, based on data from the groundwater monitoring program under§18.11d), that the groundwater protection standard of §18.3 has not been exceeded for a period of three consecutive years;

The company acknowledges this requirement and will comply.

18.11 g) The owner or operator must report in writing to the Administrative Authority on the effectiveness of the corrective action program. The owner or operator must submit these reports semi-annually;

The company acknowledges this requirement and will comply.

18.11 h) If the owner or operator determines that the corrective action program no longer satisfies the requirements of this section, he must, within ninety days, submit an application for a permit modification to make any appropriate changes to the program.

The company acknowledges this requirement and will comply.

18.12 Monitoring well abandonment and sealing of bore holes -- An owner or operator shall provide for the sealing of any vertical migration path resulting from exploratory boring and/or monitoring programs.

The company acknowledges this requirement and will comply.

18.12 a) Any boring made in evaluating a site, monitoring, or other purpose related to the hazardous waste site shall be completely filled with cementbentonite, or other equivalent technology approved by the Administrative Authority. The hole shall be left open only as necessary to obtain core samples, water samples and establish the initial water level. If subsequent samples or water level readings are to be taken, the hole shall be completed as a well with suitable casing and sealing of the annulus between the hole and the casing.

The company acknowledges this requirement and will comply.

18.12 b) When a monitoring well is to be abandoned, the owner or operator shall obtain approval for such abandonment. A request shall be made to the Administrative Authority, including the following information:

The company acknowledges this requirement and will comply.

1) Name and address of the facility;

The company acknowledges this requirement and will comply.

2) Well identification and exact location;

The company acknowledges this requirement and will comply.

3) Well construction data including:

Well depth and intermediate stratification;

Screen length and material;

Casing size and material;

Sealing of the annulus;

Other pertinent data.

The company acknowledges these requirements and will comply.

18.12 c) The Administrative Authority may accept the proposal or require modification as necessary to protect groundwater.

The company acknowledges this requirement and will comply.

18.12 d) For any monitoring well which goes through or into a recognized potable water aquifer, and any well which the Administrative Authority feels could directly impact such aquifer, the owner or operator shall additionally complete and submit an abandonment report as required by the Water Resources Section of the Office of Public Works in the Department of Transportation and Development.

COLFAX CREOSOTING COMPANY

ATTACHMENT F

CORRECTIVE ACTION PROGRAM

ATTACHMENT F

CORRECTIVE ACTION PROGRAM

Martha A. Madden
SECRETARY

OFFICE OF SOLID AND HAZARDOUS WASTE

JOHN KOURY
ASSISTANT SECRETARY

mailed 2/4/87

February 2, 1987

Mr. John Ball
Ball Engineering, Inc.
Box JB
University, Alabama 35486

Dear Mr. Ball:

Re: Proposal of November 4, 1986 for remedial action at Colfax.

The Ground Water Protection Division can allow recovery to be initiated from well P-1 at the Colfax Creosoting Company site in Pineville, but an air-lift pumping scheme has a low probability of success given the nature of the contaminantes. Air lift systems have been tried at another creosote site in Louisiana with little success due to drying and plugging of the screen and formation by creosote residues. Use of well P-1 may prove to be unsatisfactory since it is of PVC construction and has minimal sump length. if it does prove unsatisfactory, an all metal well with an extended sump for phased contaminante collection is recommended. Any recovery mechanism should be equiped with a flow meter and totalizer, and recovered water should be routinely measured for contaminante concentration so that the effectiveness of the recovery can be charted. Recovered water should be handled as a hazardous waste.

The proposed well sampling scheme is approved, with monthly sampling of wells P-2, P-3 and MW-3 for an interim period. Wells MW-2 and P-4 will be sampled annually, and wells MW-4 and MW-5 will be sampled six months later. Sampling parameters for these four wells may be limited to total phenol and napthalene. Recovered water from P-1 should be measured for K-001 constituients monthly for an interim period.

Please submit a schedule of implementation, inspection, maintenance, evaluation and reporting as soon as possible. Thank you for your continued cooperation.

Sincerely,

JACK DAGGETT
Assistant Administrator

JD:JCH:vgh

November 4, 1986

Mr. Jack Daggett, Asst. Administrator
Ground Water Protection Division
P. O. Box 44274
Baton Rouge, LA 70804

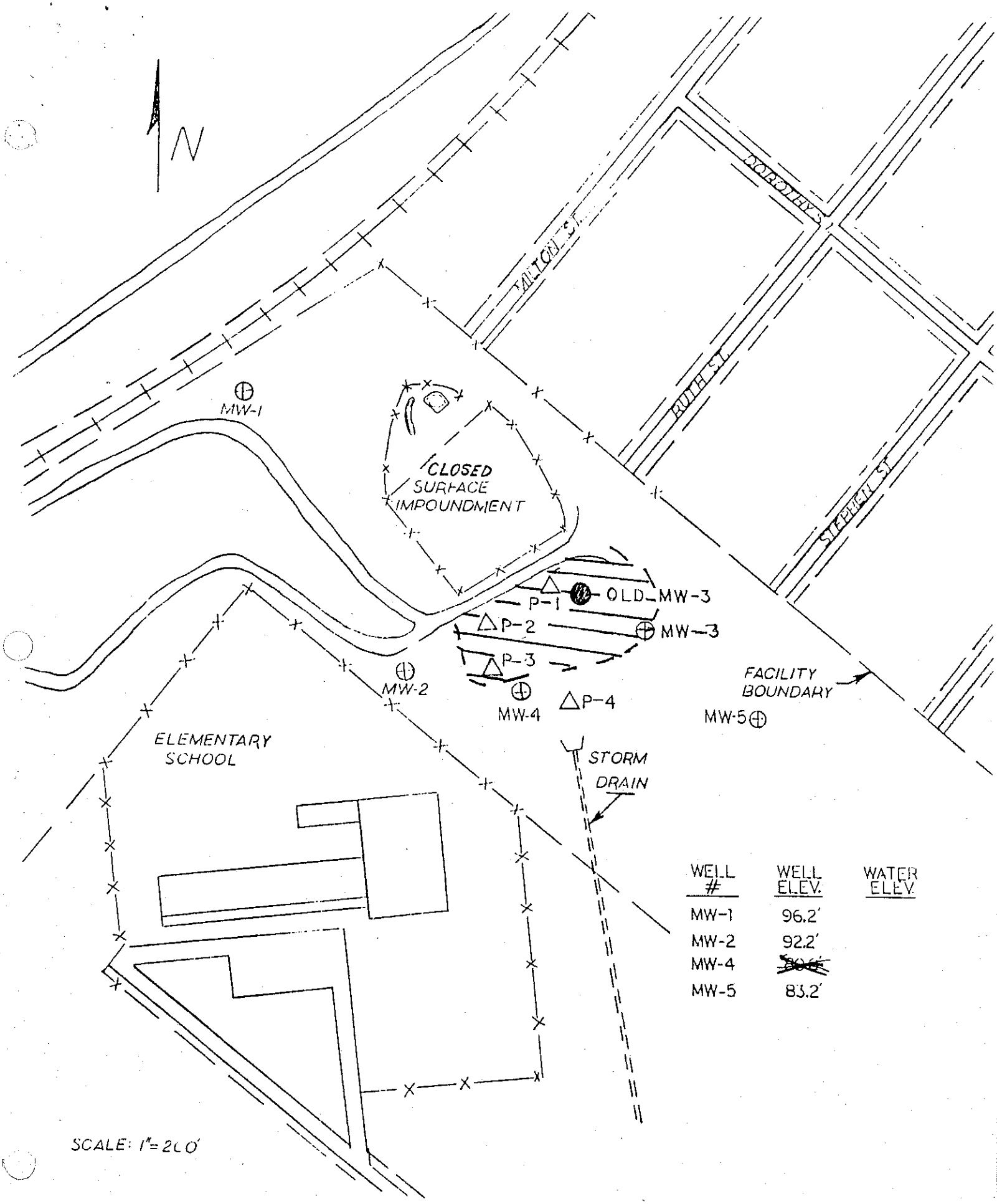
RE: Ground Water Corrective Action and Sampling Programs for Colfax Creosoting Company, Pineville, Louisiana

Dear Mr. Daggett:

The company has asked me to propose the following corrective action and sampling programs for the Pineville site. These programs are based on using all five monitor wells and four piezometers. All wells and piezometers have screened intervals to the sand layer that has shown contamination about 55 to 60 feet below the surface. The enclosed sketch indicates the approximate locations for the wells and piezometers to the recently closed surface impoundment and a suggested limit of the plume.

It is recommended that recovery be attempted using existing piezometer P-1. By producing a draw down in the piezometer, this should encourage movement northward from the plume and interception southward of material that would be moving passed the piezometer location. Recovery could be measured by analysis of the water on a routine basis. In addition, the status of the plume could be measured by taking samples from the other piezometers P-2 and P-3 and from monitor well 3. The company would use an air lift pump placed in piezometer P-1 with the discharge into a tank. The tank contents could be sampled routinely and the water would be taken to the plant process system for treating and disposal.

It is proposed to use the same device as was used in old monitor well 3 with the exception that the time sequence set to be appropriate for the recharge of the piezometer. Initially, it is proposed to take a representative sample from each tank of water and the other sources within the plum for K001 analysis. Sampling frequency may be reduced after a base line is established. After a reasonable quantity of data is obtained,



WELL #	WELL ELEV.	WATER ELEV.
MW-1	96.2'	
MW-2	92.2'	
MW-4	~~90.6'~~	
MW-5	83.2'	

GROUNDWATER ELEVATIONS

CCC

the company will send a report to your office listing the quantity pumped and K001 concentrations with time. In the event Pizometer P-1 proves to be unsatisfactory for recovery, a better well will be installed.

The company proposed a site specific monitoring program to replace the detection monitoring program now in effect. This program would use K001 constituents as the monitoring parameter to replace the EPA (b)(1), (b)(2), and (b)(3) parameters. It is proposed to use a detection level of 0.01 mg/L for all constituents except pentachlorophenol which would be 0.05 mg/L. It is proposed to sample wells MW-2 and piezometer P-4 once per year followed by MW-4 and MW-5 taken six months afterward. This procedure would result in sampling all four wells that are outside the plume each year.

Please let us have your thoughts concerning our two proposals.

Very truly yours,

John Ball

Enclosure

cc: Mr. Clyde Norton
Mr. Maurice Lasserre